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INFLUENCE OF GENDER AND SCHOOL LOCATION ON STUDENTS' MOTIVATION, ATTITUDE AND ACHIEVEMENT IN MATHEMATICS IN OYO EAST LOCAL GOVERNMENT AREA, OYO STATE.

Olosunde, G.R. Ph.D.; Oyegoke, D. A. and Ojebisi, O.A.
Department of Primary Education Studies
Federal College of Education (Special), Oyo
Department of Curriculum Studies
Federal College of Education (Special), Oyo

Abstract

This research investigated the influence of gender and school location on students' motivation, attitude and achievement in Mathematics. The study was adopted ex post facto design. One hundred and ten (110) Senior Secondary School II students participated in the study out of which 61 were males and 49 were females. Three instruments (MSI, r = 0.87, AS, r = 0.76 and MAT, r= 0.78) were validated and used in the study. The formulated hypotheses were tested using independent t-test. The results showed that there was significant difference between urban and rural students' academic achievement in Mathematics ($t_{(108)}$=9.25; p<0.05) but there was no significant difference between rural and urban students' their attitude and motivation towards Mathematics. Based on these results, it is recommended that all stake holders in education should ensure that students are highly motivated by providing necessary materials, enabling environment and adequate reward system.

Keywords: Gender, School Location, Motivation, Attitude, Achievement.

Introduction

Schools across Nigeria are experiencing ever increasing pressure to raise students' achievement. In order to meet the growing demand of students' achievement, educators at all levels have created and implemented strategic plans that focus on adult controlled variables such as professional development and the purchasing of computer based learning programme. However, perhaps the most significant factor in determining student achievement is simply student motivation (Yara, 2009 Jason, 2010).

Motivation is one of the most widely studied areas in the field of psychology and its implications, in the field of education is apparent. Psychologists have established two major concepts in regards to motivation as both extrinsic and intrinsic (Ogunwuyi, 2000).

Human beings are said to be extrinsically or intrinsically motivated. Intrinsic motivation is the tendency to engage in tasks because one finds them interesting, challenging, involving a satisfying delight and satisfaction in doing such tasks. Extrinsic motivation is the tendency to engage in tasks because of task-unrelated factor such, as promise of rewards and punishment dictates from superiors, surveillance and complications with peer (Onuka & Durowoju, 2011). Intrinsic motivation is seen as internal reward such as joy, self-fulfillment. It is said to be derived internally in the job itself while extrinsic motivation based on is the incentive or reward and punishment that a person may attract after the job has been completed (Kairo, 2010) reported that;

Students' motivation has to do with stimulating someone with the aim of making him to participate in a particular cause of action. Onuka and Durowoju (2011) viewed students' motivation as the reason for their involvement or non-involvement in academic achieyemen4. Although, students may be equally motivated to perform a task, though, the source of their motivation could differ. Therefore, it is pertinent to stress the issue of motivation of students in Mathematics education and its impacts on students' academic performance.

School location has also been viewed as one factor that affects students' academic achievement (Akpan, 2001). Over the past two decades, researches have indicated that the educational aspirations of students who study in the rural areas lag behind than

those of their urban counterparts (Josiah, 2012)

Related findings from other studies have further indicated that students from schools located in rural area place less value on academics (Stern, 1994). The study of Lev, Nelson and Beltyukova (2010) investigated 2,355 students from 21 rural high schools in 21 states. The study asked students to indicate the importance of 21 attributes relating to their personal goals after high school. The finding of the study revealed that they placed more importance on personal qualities like being dependable and having ability to get along with others than academic achievement such as proficiency n both English Language skills and Mathematics skills. It follows then, that lower educational aspirations and less importance placed on academic by students in rural schools could lead to poor academic achievement in physics than their urban counterparts.

Attitude of student to mathematics as a factor could be viewed as the totality of an individual's inclination towards object, institutions or ideas. Attitude could be learnt or formed and acquired from member of family, leader and peer group. The learner acquires from the teacher's disposition to form attitude towards learning which could positively or negatively affect performance. Teachers are role models to students because as they act, so do the students demonstrate and perfect such act or behaviour. It is very clear that the way and manner teachers handled the teaching of Mathematics as a subject, behave and interact with the students as Mathematics teachers could produce major effect on students' achievement.

Literature has also indicated that teachers' attitude and students' attitude have exerted some influence on the academic achievements of students. For instance Yara (2009) reported that teachers' attitude towards science have strong relationship with students science achievement as well as the students' attitude towards science. Onuka and Durowoju (2011) showed that teachers attitude towards science is a potent predictor of students' academic achievement in science and attitude towards learning.

The issue of gender disparity in Mathematics education in terms of access to education, participation and performance is a big problem. In a study carried out by Oyegoke (2015), effects of innovative peer mastery learning strategy and gender were investigated on the pupils' achievement in mathematics. The study showed that effects of mastering learning strategy was significant on pupils achievement in mathematics, F (1,107) = 49.503, mean score of innovative mastery learning strategy group was higher than that of the ~~co~~nventional group. Also, gender has a significant effect on pupils' achievement in Mathematics F (1,107) = 23.561; P <0.05 in favour of female pupils. Farooq and Shah (2008) investigated 10th grade students' attitude towards Mathematics using 379 male and 306 female students selected from ten private and public schools. The result of the study showed that male and female students of 10th grade of the secondary schools of Lahore have same measure of attitude towards Mathematics. It implies gender differential inconsequential on the students' attitude towards Mathematics in Pakistan.

In addition, Oyegoke (2017) examined the effects of innovative mastery learning strategy and gender on the pupils' attitude in Mathematics using 112 primary five pupils

as sample. The study used clustering and simple random sampling techniques. The findings of the study showed that gender has a significant effect on pupils' attitude to Mathematics F(1,107) =20.951; P<0.05 in favour of male pupils.

According to Agwagah (2013), there is still low access to education by females, low participation and poor performance of girls especially in Mathematics and science. She lamented that the participation of girls in science mathematics and technology is pathetic. In another study, Kairo (2010) reported that the inequality in education is reflected in lower enrolment rate, higher dropout rates and performance among girls in schools. The study stated that inequality is also found in curricular choices are offered at secondary and tertiary levels where for instance, enrolment rates are lower for females in science technology and mathematics than for males, and curricular choice are offered by traditional and cultural expectations. Boys have been reported to perform more than girls in secondary school mathematics are reference. The present study examined the area of motivation in the content of domain of school mathematics need to examine the relationship that exists between the school locations, gender and attitude and academic achievement in mathematics.

Hypotheses

This study tested the following hypotheses:

1. There is no significant influence of school location on students' achievement in Mathematics.
2. There is no significant influence location on students' attitude towards Mathematics.
3. There is no significant influence of school location on students' motivation in Mathematics.
4. There is no significant influence of gender on students' achievement in Mathematics
5. There is no significant influence of gender on students' attitude towards Mathematics.
6. There is no significant influence of gender on students' motivation in Mathematics.

Methodology

This study adopted e post facto design of survey research type. Stratified random sampling technique was used in the selection of the sample for the study (rural and urban schools) in the Oyo East Local Government. A total of one hundred and ten (110) SS one students comprised (61) males and (49) females were randomly selected from 4 senior secondary schools in Oyo East Local Government Oyo State. 65 students were sampled from urban area while 45 students were sampled from the rural area. The sample size was 110 senior secondary school students.

The following instruments were used for data collection. Motivational Scale Instrument (MSI), Attitudinal Scale (AS) and Mathematics Achievement Test (MAT). To determine the reliability of the instruments, the instruments were administered on fifty students who were not part of the sample for the study. Through Cronbach alpha reliability method, the reliabilities coefficients of MSI and AS were ascertained. They were found to be 0.87 and 0.76 respectively. The reliability coefficient of MAT was established using KR_{2O} and it was found to be 0.78. After the administration of the instrument to the respondents, 100% return rate was achieved.

Results

1. There is no significant influence of school location on students' achievement in Mathematics.

Table 1: Summary of t-test analysis showing difference between urban and rural students in the academic achievement in Mathematics.

Achievement in Mathematics	N	Mean	S.D	Df	t-value	Sig	Remark
Urban	65	30.31	3.71	108	9.25	.000	significant
Rural	45	21.20	6.49				

Table 1 shows that there is a significant difference between Students' achievement in schools located in urban and rural areas in the achievement in mathematic ($t_{(108)}$= 9.25; p<O.05). The mean scores show that urban students had higher Mathematics achievement mean score (30.31) than the rural students (21.2).

2. There is no significant influence of school location on students' attitude towards Mathematics.

Table 2: Summary of t-test analysis showing difference between urban and rural students in their attitude towards Mathematics.

Attitude to Mathematics	N	Mean	S.D	Df	t-value	Sig	Remark
Urban	65	33.20	3.69	108	0.68	.497	Not significant
Rural	45	32.71	3.69				

Table 2 shows that there is no significant difference between urban and rural students in their attitude towards mathematics $t_{(108)}$= 0.68; p > 0.05.

3. There is no significant difference between school location students' motivation towards Mathematics.

Table 3: Summary of t-test analysis showing difference between urban and rural students in their motivation towards Mathema-tics.

Motivation	N	Mean	S.D	df	t-value	Sig	Remark
Urban	65	25.16	4.81	108	1.52	.131	Not significant
Rural	45	24.00	3.75				

Table 3 shows that there is no significant difference between urban and rural students in their motivation towards mathematics ($t_{(108)}$=1.52; p>0.05).This implies that students in urban and rural areas had the same motivation towards Mathematics.

4. There is no significant difference between the achievement of male and female students' in Mathematics.

Table 4: Summary of t-test analysis between male and female students achievement in Mathematics

Achievement	N	Mean	S.D	df	T value	Sig	Remark
Male	61	25.42	3.60	108	-1.33	.186	Not significant
Female	49	27.15	7.33				

Table 4 shows that there was no significant difference between male and female students in their achievement in mathematic ($t_{(108)}$ = -1.33; p > 0.05).

5. There is no significant difference between students' gender and their attitude towards Mathematics.

Table 5: Summary of t-test analysis showing difference between male and female students in their attitude towards Mathematics

Attitude	N	Mean	S.D	df	t-value	Sig	Remark
Male	61	33.00	3.73	108	0.05	.957	Not significant
Female	49	32.96	3.66				

Table 5 shows that there is no significant difference between male and female students in their attitude towards mathematics ($t_{(108)}$ = -0.05; p > 0.05).

6. There is no significant difference between students' gender and motivation towards Mathematics.

Table 6: Summary of t-test analysis showing difference between male and female students in their motivation towards Mathematics

Motivation	N	Mean	S.D	df	t-value	Sig	Remark
Male	61	25.70	3.88	108	-2.96	.004	significant
Female	49	23.51	3.88				

Table 6 shows that there is a significant difference between male and female students in their motivation towards Mathematics ($t_{(108)}$ = -2.96; p < 0.05). The

mean scores show that male students had higher mean score (25.70) in motivation in Mathematics than the female students (23.51) and it was statistically significant.

Summary of Findings

1. There was significant difference between achievement in Mathematics of students in the urban area and those in the rural area.
2. There was no significant difference between attitude towards Mathematics of students in the urban area and those in the rural area.
3. There was no significant difference between motivation towards Mathematics of students in the urban area and those in the rural area.
4. There was no significant difference between male and female students' achievement in mathematics.
5. There was no significant difference between male and female students' attitude towards Mathematics.
6. There was significant difference between male and female students' motivation towards Mathematics.

Discussion

The findings of this study showed that school location influence students' achievement in Mathematics with the students in urban area having the higher academic performance in Mathematics than students in the rural area. This could be as a result of the fact that majority of teachers prefers staying in the urban area to rural area. This drift could affect the quality of teachers in the urban area having better quality than those in the rural area. However, the findings of the study showed that school location did not influence the attitude and motivation of students towards Mathematics. This could be attributed to the fact that attitude and motivation are personal attributes that could be engendered within or outside the students. Students in urban and rural areas could have same disposition towards Mathematics irrespective of the teachers that taught me. In the same vein, they could be intrinsically motivated towards Mathematics without the effort of the Mathematics teachers. The result of this finding agrees with the studies of Akpan (2001) and Josiah (2012) that established that school location affects students' academic achievement. The result of study also showed that students in rural schools performed worse in Mathematics than their counterparts in urban area. This finding supports Stern(1994).

In addition, the result showed that students' gender did not influence their achievement in and attitude towards Mathematics. It implies that male and female students have the same achievement in Mathematics. The finding is in tandem with the finding of the study of Josiah (2012) which showed no disparity between male and female achievement in physics. Also, the attitude of the student towards Mathematics is the same irrespective of their gender. The finding of this study is not agreement with the studies of Oyegoke (2015) and Oyegoke (2017) that discovered gender parity in the achievement and attitudes of pupils towards Mathematics in Oyo metropolis. However, this study showed that there was significant difference between motivation of male and female students towards Mathematics. Male students were more motivated than their female counterparts. This finding is in consonance with the results of the studies of Jason (2010), Josiah (2012) and Onuka and Durowoju (2011).

Conclusion

From the findings of this study, one can state that school location plays a significant role in

students' achievement in Mathematic and gender plays a significant role in students' motivation towards Mathematics and this makes this present study a worthwhile venture. However, when examining the attitude and motivation of students towards Mathematics, school is not a factor to be considered. Gender is not a factor that can improve or impede students' achievement in Mathematics and attitude towards Mathematics. The findings of this study have meaningful implications for principals of secondary schools, learners, parents, educational planners, educational evaluators and other stakeholders in education. Therefore, teachers should be evenly distributed among rural and urban schools. Students irrespective of their gender should be motivated and given the same level of encouragement towards learning of Mathematics.

Recommendations

Based on the findings of the study the following recommendations were made:

1. All students irrespective of his or her gender should be given the same level of encouragement and attention for better cognitive achievement in mathematics.
2. All stakeholders in education should ensure that students are highly motivated by providing necessary materials, enabling environment and adequate reward system.
3. There should be equal distribution among rural and urban areas.
4. Mathematics teachers in rural and urban areas should be given equal chance to attend seminars, workshop and in service training in order to improve their teaching skills.

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